

## Science and Technology

### I Rationale:

Science and technology are intricately connected, therefore, stuck with each other. Science feeds technology and technology serves science. This lesson sequence uses two NASA related web sites to highlight the transfer of NASA technology to the private sector and to commercial entities. Common everyday products the students are familiar with may have originated from NASA technology. These are introduced and discussed in the benefits of the space program section.

### II Procedures:

#### 1. Recommended Activities

- Access the following site: <http://www.sti.nasa.gov/tto/>
  - Direct students to dated issues of Spinoff, the following are selected articles of interest. They have been saved and are accessible through this site as PDF files.
    1. [Spinoff 2005; Consumer/Home/Recreation – “Inertial Motion – Tracking Technology for Virtual 3D”](#)
    2. [Spinoff 2004; Transportation – “Forecasting Weather with a Wave of the Hand”](#)
    3. [Spinoff 2002; Environment and Resources Management – “Pest Control on the Fly”](#)
    4. [Spinoff 2001; Transportation – “New Technology Sparks Smoother Engines and Cleaner Air”](#)
    5. [Spinoff 2001; Consumer/Home/Recreation – “Lifetime of Shine”](#)
    6. [Spinoff 2000; Health and Medicine – “Robotic Surgery”](#)
    7. [Spinoff 1998; Industrial Productivity – “It’s A Clean Machine”](#)
    8. [Spinoff 1997; Public Safety – “Invisible Flame Imaging”](#)
    9. [Spinoff 1997; Computer Technology – “Structural analysis and Design Software”](#)
- Access the following site: [http://techtran.msfc.nasa.gov/at\\_home.html](http://techtran.msfc.nasa.gov/at_home.html) - This site will allow students to explore how NASA technology affects their everyday lives.

### III Content Standards Addressed:

#### National Science Education Standards:

- **E.2.1** – Scientific inquiry and technological design have similarities and differences
- **E.2.3** – Science and technology are reciprocal
- **E.2.4** – Perfectly designed solutions do not exist. Reducing risk often results in new technology
- **E.2.5** – Technology designs have constraints
- **E.2.6** – Technological solutions have intended benefits and unintended consequences

#### National Council of Teachers of Mathematics:

- **A.1.1** – Work flexibly with fractions, percents, and decimals to solve problems
- **A.2.1** – Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers
- **B.2.1** – Develop an initial conceptual understanding of different uses of variables
- **C.4.5** – Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom

- **D.1.3** – Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume

**National Education Technology Standards:**

- **A.2.1** – Students understand the ethical, cultural, and societal issues related to technology
- **A.2.3** – Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity

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